

REMARKS

Applicant hereby adds claims 111-112. Accordingly, claims 65-75 and 111-112 are pending in the present application.

Claims 65-75 stand rejected under 35 USC 103(a) for obviousness over U.S. Patent No. 5,872,019 to Lee in view of U. S. Patent No. 5,655,940 to Hodson et al. and further in view of U.S. Patent No. 4,808,983 to Benjamin.

Applicant respectfully traverses the rejections and urges allowance of the present application.

Referring to the obviousness rejection of claim 65, Applicant submits that in order to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See, e.g., MPEP §2143 (8th ed., rev. 2). The Office has failed to establish a *prima facie* 103 rejection of claim 65 and claim 65 is allowable for at least this reason.

As set forth on pages 2-3 of the Action, the Office identifies numerous deficiencies in the teachings of Lee with respect to the limitations of claim 65. Thereafter, on page 3 of the Action, the Office refers to numerous teachings of Hodson which are apparently relied upon in support of the obviousness rejection to cure the admitted deficiencies of the Lee reference. However, there is no motivation presented by the Office in support of the combination of the teachings of Hodson with the

teachings of Lee and none exists. The Office has failed to present a proper *prima facie* rejection of claim 65 for at least this reason and claim 65 is allowable.

The legal concept of *prima facie* obviousness is a procedural tool of examination and allocates who has the burden of going forward with production of evidence in each step of the examination process. MPEP §2142 (8th Ed., revision no. 2). MPEP §§2142 and 2143 address this legal concept extensively. The **examiner bears the initial burden** of factually supporting any *prima facie* conclusion of obviousness, that is, “the initial burden is on the examiner to provide some suggestion of the desirability of doing what the inventor has done.” MPEP §2142 (8th Ed., revision no. 2) (emphasis added).

Referring again to the Action, the Office has failed to identify or recite any reasoning or rationale for combining the teachings of Hodson with the teachings of Lee in support of the 103 rejection. Accordingly, in view of the MPEP, the Office has failed to establish a *prima facie* 103 rejection of claim 65 and the claimed method is allowable for at least this reason.

More specifically, Lee is concerned with providing a display arrangement wherein *a field emitter array is fabricated on a single substrate together with MOSFETs for driving the field emitter array to achieve reduction in drive power and improvement in uniformity of pixels* as set forth in col. 1, lines 7-15 of Lee. As set forth in col. 1, lines 35-45 of Lee, an object of Lee is to eliminate additional processing required in connecting a field emitter array with drive circuitry by fabricating the field emitter array on a single substrate together with the drive circuits (i.e., MOSFETs).

To the contrary of the objectives of Lee including reducing processing by eliminating plural structures including drive circuitry and the emitter array and fabricating

such assemblies on a single substrate, Hodson is directed towards assembly of plural arrays on different plates and tiling the plates together upon a panel 90. Further contrary to the objectives of Lee using a single substrate for drive circuitry and reducing processing, Hodson at col. 4, lines 10-15 teaches that a plurality of column drivers 130, 140, 150, 160 may also be used. In view of these explicit contrary teachings of the references (i.e., reducing components and fabrication of Lee versus many components and additional processing of Hodson), Applicants respectfully submit that one of ordinary skill in the art would not combine the inapposite teachings of Hodson and Lee in support of the rejection of claim 65.

More specifically, *Lee is not concerned with* the aims of Hodson of fabricating large displays. Rather, Lee is concerned with *pixel uniformity and reducing processing*. To those ends, Lee clearly discloses usage of a single substrate to fabricate the emitter array and the drive circuits. There is absolutely no motivation to go in a direction entirely opposite to the objectives of Lee to modify Lee as allegedly by the Office to utilize a plurality of emitter plates as disclosed by Hodson. The modification of Lee would eliminate the advantages and objectives gained by the Lee arrangement of providing uniform pixels and reducing processing. This stated position in combination with the lack of any motivation identified in the Office Action to modify Lee with the teachings of Hodson clearly supports Applicant's position that the 103 rejection is in error. At a minimum, the Office has failed to meet its burden of establishing motivation and the rejection of claim 65 is improper for at least this compelling reason.

The Federal Circuit discussed proper motivation *In re Lee*, 61 USPQ 2d 1430 (Fed. Cir. 2002). The motivation identified in the Office Action is akin to the conclusory

statements set forth in *In re Lee* which were found to fail to provide the requisite motivation to support an obviousness rejection. The Court in *In re Lee* stated the factual inquiry whether to combine references must be thorough and searching. It must be based on objective evidence of record. The Court in *In re Fritch*, 23 USPQ 2d 1780, 1783 (Fed. Cir. 1992) stated motivation is provided only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. The Office has failed to present *any rationale* for modifying the teachings of Lee using the teachings of Hodson let alone proper motivation based upon objective evidence of record. The 103 rejection is clearly improper for at least this reason.

Further, the motivation presented by the Office for combining the teachings of Benjamin is insufficient and the 103 rejection of claim 65 is improper for this additional reason. In particular, Benjamin at Fig. 13 discloses a substrate 5 and a plurality of encoders EE separate from the substrate 5. Benjamin including encoders separate from the substrate is directed towards arrangements of no concern to Lee. As mentioned above, Lee is directed towards embodiments including fabricating drive circuitry from the same substrate as containing the emitters to achieve improved pixel uniformity and reduce the processing. Lee is not directed towards addressing of chips for which the plurality of encoders are provided in Hodson. In particular, cols. 7-8 of Benjamin disclose specific arrangements for improving addressing of chips to overcome RC time constants of electrode tracks for addressing chips. However, Lee is concerned with field emission devices not chips or addressing of LCD arrangements. The problems experienced and addressed by Benjamin for chips 9 and the LCD

arrangements thereof are of no concern to Lee and fail to provide any motivation to modify the Lee teachings. There is no evidence of record that modification of Lee using LCD technologies of Benjamin would in fact result in an operable device or provide any benefit to motivate one to modify Lee. The modification proposed by the office to include a plurality of separate encoders as disclosed by Lee would frustrate the purpose of Lee to fabricate the drive circuitry using the same substrate as the emitters and reduce processing. *In re Fitch*, 972 F.2d 1260, 1265 n.12, 23 USPQ2d 1780, 1783 n.12 (Fed. Cir. 1992) (stating that a proposed modification is inappropriate for an obviousness inquiry when the modification renders the prior art being modified inoperable for its intended purpose). The 103 rejection is improper for at least this additional reason.

It is stated on page 4 of the Action that the combination is appropriate to increase the refresh rate for a display of appreciable size. Applicant disagrees. There is no evidence that the size of the emission displays of Lee are insufficient or that the size of the emission displays of Lee could be increased while maintaining the objectives of Lee if the teachings were modified as alleged using disparate LCD technology. Apart from the bald conclusions of the Office, there is no evidence of record that the teachings regarding silicon bars of LCD technology of Benjamin could be applied to the emission device technology of Lee. Referring again the Federal Circuitry *Lee* case, The *Lee* Court stated that the Examiner's conclusory statements in the *Lee* case do not adequately address the issue of motivation to combine. The Court additionally stated that the factual question of motivation is material to patentability and can not be resolved on subjective belief and unknown authority. The Court also stated that

deficiencies of cited references cannot be remedied by general conclusions about what is basic knowledge or common sense. The Court further stated that the determination of patentability must be based on evidence.

In the instant case, **the record is entirely devoid of any evidence to support motivation to combine the teachings apart from the bald conclusory statements of the Examiner which are insufficient for proper motivation** as set forth by the Federal Circuit. The Office cannot rely on conclusory statements when dealing with particular combinations of prior art and specific claims but must set forth objective rationale on which it relied.

In particular, there is absolutely **no evidence of record** to support the **subjective conclusory statements of the Examiner**. The only motivation presented in the Office Action is based upon **the Examiner's subjective belief or unknown authority which is insufficient as clearly held by the applicable authority**. As set forth by the Federal Circuit, there is no motivation and the Office Action has failed to establish a prima facie case of obviousness and accordingly the 103 rejection is improper.

At page 7 of the Action, it is stated that Benjamin is disclosed for the purpose of demonstrating that Lee and Hodson may not be limited to tiled displays but also monolithic display. However, Applicant submits that Benjamin is not directed to monolithic arrangements and in fact uses a plurality of silicon bars 9 as opposed to a monolithic semiconductive substrate and accordingly is irrelevant to a monolithic substrate having a plurality of electrically isolated emitter regions or modifications of Lee

or Hodson to render such obvious. Claim 65 is allowable for at least the above-mentioned reasons.

Referring again to the three requirements for a proper prima facie 103 rejection, Applicant respectfully submits that positively recited limitations of claim 65 are not disclosed nor suggested by the prior art even if the references are combined and claim 65 is allowable for this additional reason. In particular, the prior art references, taken alone or in combination, fail to disclose or suggest *forming plural emitter regions using a monolithic semiconductive substrate* in combination with the claimed *electrically isolating the emitter regions from one another* and providing emitters within individual ones of the emitter regions. Lee is void of plural regions electrically isolated from one another. Hodson discloses discrete tiled plates which are placed next to one another and Benjamin is directed towards addressing using silicon bars and fails to disclose or suggest any emission structures or the plurality of emitter regions. Accordingly, even if the references are combined, the combination fails to disclose or suggest limitations of claim 65 including a monolithic semiconductive substrate and electrically isolated emitter regions and claim 65 is allowable for this additional reason.

Finally, referring to the third requirement of a proper prima facie rejection, there is absolutely no expectation of success given the disparate teachings of the references combined. More specifically, there is no evidence that the teachings of Benjamin regarding LCD and addressing of silicon bars may be applied to field emission devices of the other references. The Office has presented no evidence that the disparate teachings of the references may be combined as alleged by the Office to produce an operable device or that the objectives of Lee being modified would not be frustrated by

the modification. The Office has failed to establish a prima facie rejection of claim 65 for at least the above -mentioned reasons and Applicant respectfully requests allowance of claim 65 in the next Action.

With respect to the Office's position on page 6 of the Action and the allegation that Lee discloses claimed emitter regions, Applicant respectfully requests identification of teachings of Lee which allegedly disclose the emitter regions *as claimed*. More specifically, claim 65 defines the emitter regions individually comprising plural emitters, electrically isolating the emitter regions from one another, and providing plural address circuits for respective ones of the emitter regions. Further with respect to the Office's comments on page 6 regarding Benjamin, Applicant again submits that Benjamin fails to disclose or suggest forming plural emitter regions using a monolithic semiconductive substrate but to the contrary uses a plurality of silicon bars to implement addressing of a liquid of an LCD configuration irrelevant to limitations of claim 65. The rejection of claim 65 is inappropriate for the above-mentioned compelling reasons.

In the event that a rejection of claim 65 is maintained with respect to the prior art, or a new rejection made, Applicants respectfully request identification *in a non-final action* of elements which allegedly correspond to limitations of the claims in accordance with 37 C.F.R §1.104(c)(2). In particular, 37 C.F.R §1.104(c)(2) provides that *the pertinence of each reference, if not apparent, must be clearly explained and each rejected claim specified*. Further, 37 C.F.R. §1.104(c)(2) states that the Examiner must cite the best references at their command. When a reference is complex or shows or describes inventions other than that claimed by Applicants, the particular teachings relied upon must be designated as nearly as practicable. The pertinence of each

reference if not apparent must be clearly explained for each rejected claim specified. Applicants respectfully request clarification of the rejections with respect to specific references and specific references teachings therein pursuant to 37 C.F.R. §1.104(c)(2) in a non-final Action if any claims are not found to be allowable.

The claims which depend from independent claim 65 are in condition for allowance for the reasons discussed above with respect to the independent claim as well as for their own respective features which are neither shown nor suggested by the cited art.

For example, referring to the rejection of dependent claim 68, the Office has taken opposing positions of the prior art. On pages 2-3 of the Action, it is stated by the Office that Lee fails to disclose or suggest the claimed electrical isolation of the emitter regions and thereafter on page 4 of the Action it is stated that Lee discloses the claimed electrically isolating comprises etching to define the emitter regions. If claim 68 is not allowed, and in accordance with the above-recited CFR provision, Applicant respectfully requests clarification of the opposing positions by the Office of the teachings of the Lee reference in a *non-final* Action so Applicant may appropriately respond during the prosecution of this application.

Referring to claim 69, there is no teaching or suggestion, even if the prior art references are combined, to provide a plurality of electrically isolated emitter regions and wherein the emitters comprise bulk substrate material of a monolithic semiconductive substrate as claimed. Benjamin relied upon for monolithic teachings fails to disclose emitter configurations or bulk monolithic semiconductive substrates and

merely discloses plural silicon bars for addressing of pixels. Claim 69 is allowable for this additional reason.

Applicant hereby adds new claims 111 and 112 which are supported at least by Fig. 2 and the associated teachings of the originally-filed specification.

Applicant respectfully requests allowance of all pending claims.

The Examiner is requested to phone the undersigned if the Examiner believes such would facilitate prosecution of the present application. The undersigned is available for telephone consultation at any time during normal business hours (Pacific Time Zone).

Respectfully submitted,

Dated: _____

2/28/05

By: _____



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